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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,591	11/07/2001	Yeshik Shin	59478108US1	2885

25096 7590 12/13/2005

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EXAMINER	
AHMED, SALMAN	

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/035,591	SHIN ET AL.	
	Examiner	Art Unit	
	Salman Ahmed	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20,23-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 April 2002 and 07 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/7/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 8-10 of the Remarks section, filed 10/11/2005, with respect to the rejection of claims 1 and 30 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive. Applicant argues that neither Jewett nor Tonkin suggest a desirability in making a combination of references, and therefore the combination of Jewett in view of Tonkin would not be obvious to one of ordinary skill in the art at the time of the invention. Applicant further argues as Jewett solves problems by providing additional connections between a host and a storage resource. Jewett teaches away from the use of serial communication links between hosts and storage resources. However, examiner respectfully disagrees with this assertion. The present claim language is broad and in view of the broadest reasonable interpretation of this language, as was indicated in the previous office action, examiner further points out that Jewett teaches (page 1 section 0009) one feature of the architecture is that concurrent input/output (I/O) requests from the same host computer ("host") are handled over separate logical network connections or sockets (preferably TCP/IP sockets). For example, in a preferred embodiment, a given host can establish two socket connections with a given block-level storage server, and use one socket to perform one I/O request while using the other socket to perform another I/O request. As a result, the failure or postponement of one I/O request does not block or interfere with other I/O requests. Examiner respectfully points out that socket connections are virtual connections, which can be performed over same physical connection. Jewett further teaches (page 2

section 0030) in one embodiment, the network 100 may be any type or combination of networks that support TCP/IP sockets, including but not limited to Local Area Networks (LANs), wireless LANs (e.g., 802.11 WLANs), Wide Area Networks (WANs), the Internet, and direct connections. As such examiner respectfully disagrees with the applicant's assertion Jewett teaches away from the use of serial communication links between hosts and storage resources.

2. Applicant's arguments, see pages 10 of the Remarks section, filed 10/11/2005, with respect to the rejection of claim 19 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive. Applicant argues that Lin does not describe serial communication links between a host device and a data store device within a Storage Area Network, and does not remedy the deficiencies discussed above with respect to the combination of Jewett and Tonkin. However, examiner respectfully disagrees with this assertion. The present claim language is broad and in view of the broadest reasonable interpretation of this language, as was indicated in the previous office action, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett and Tonkin's teaching by incorporating Lin's teaching of asymmetric network node. Lin further points out (column 2 lines 53-59) for services which entail an asymmetric data rate requirement as between the uplink and the downlink, for example where the volume of traffic data on the uplink differs greatly from a volume of traffic data on the downlink, a symmetric frequency spectrum allocation for the uplink and downlink beams is inefficient. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the

structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art at the time the invention was made. See In re Keller 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

3. Applicant's arguments, see pages 10 of the Remarks section, filed 10/11/2005, with respect to the rejection of claims 2-18, 20-29, and 31-40 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive. Applicant argues that since claims 2-18, 20-29, and 31-40 depend from claims 1, 19 or 30, they are patentable for at least the reasons stated with respect to the independent claims. However, examiner respectfully disagrees with this assertion for the reasons stated above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-4, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett et al. (US PAT PUB 2002/0049825), herein after referred to as Jewett and in view of Tonkin et al. (US PAT PUB 2002/0171741), hereinafter referred to as Tonkin.

Jewett teaches a communications architecture, Storage Area Network (page 2 section 40) as in claims 1-4, 30 and 31, for communicating between hosts and block-oriented data store devices (claim 4) (page 2 section 27, system architecture for providing block-level storage access over one or more computer networks) and disk based storage (page 1 section 8, disk arrays) as in claim 3, the communications architecture comprising: a plurality of hosts, each host having a communications interface; a plurality of data store devices, each data store device having a communications interface, and a switching network (figure 1, 2 and 4) having communications interfaces for establishing communications paths between hosts and data store devices (page 2 section 27, a system architecture for providing block-level storage access over one or more computer networks. The architecture is designed to incorporate any number of host computers and block-level storage servers

communicating across a network or a combination of networks. In one embodiment, the architecture exports virtualized storage blocks over TCP/IP connections. Because TCP/IP is used for communications between the host computers and block-level storage servers in a preferred embodiment, a variety of network topologies can be used to interconnect the host computers and the block servers of a given system. For example, for relatively small systems, the host computers and storage servers can be interconnected by a hub, while for larger systems, the hub may be replaced with a switch).

Jewett does not teach as in claims 1 and 30 the links between the host, switch and the storage units being serial, the communications architecture supporting control packets and data packets, the control packets and data packets having headers with different formats, the data packets having a variable length, and the steps of supporting of preemption of data packets by control packets.

Tonkin teaches in regards to claims 1 serial links in the communication system (page 1 section 008, digital serial communication and control system). Tonkin teaches in regards to claims 1 and 30, a communications architecture and network supporting control packets and data packets (page 3 section 0040, data is communicated between the primary hub, the main processor and the remote devices using two distinct formats; a control packet, and a data packet), the control packets and data packets having headers with different formats (table 1 and table 2), data packets having a variable length (table 2), and supports preemption of data packets by control packets (page 4 section 0046, during the transmission of an RS-170 color video data packet,

transmission is interrupted and a high priority control packet is inserted in the data stream) .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett's teaching by incorporating Tonkin's concept of data and control packets handling scheme over serial communication. The motivation is that by categorizing packets as control and data packets, by giving higher priority to control packets, by making the headers of control packets and data packets different, one can make a serial communication based storage area network type of architecture very efficient and relatively inexpensive.

7. Claims 16, 17, 19, 25, 26, 27, 29, 38, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin, and further in view of Lin et al. (US PAT 6791952), hereinafter referred to as Lin.

In regards to claims 16, 17, 19, 25, 26, 27, 29, 38, 39 Jewett and Tonkin teach a communications architecture as in claim 19 Storage Area network as in claim 25 for communicating between hosts and disk based data store devices as in claim 26, the communications architecture comprising: a plurality of hosts, each host having a communications interface with a serial communications link; a plurality of data store devices, each data store device having communications interface with a serial communications link and being block-oriented; and a switching network having communications interfaces with serial communications links for establishing

communications paths between hosts and data store devices and the communication being done by control packets and data packets of different formats as in claim 27 with control packets preempting (as in claim 29) data packets as described in the rejection of claim I above. In regards to claims 17 and 39 Jewett teaches of data packets being sent over tcp/ip (page 2 section 0030) and It is known in the art that when using tcp/ip, tcp packet has checksum for error checking.

In regards to claims 16, 17, 19, 25, 26, 27, 29, 38, 39 Jewett and Tonkin do not teach a switching network as in claims 16, 19 and 38 asymmetrically processes packets transmitted by hosts and packets transmitted by data store devices.

Lin teaches In regards to claims 16, 17, 19, 25, 26, 27, 29, 38, 39 (column 4 lines 39-53) the steps of allocating bearer channels at a radio base station, which is configured for communicating with a plurality of subscriber radio terminals, said method comprising the steps of: allocating a plurality of paired bearer channels for carrying circuit switched data, each said bearer channel pair comprising an uplink channel carried on an uplink frequency slot, and a downlink bearer channel carried on a downlink frequency slot; and allocating packet switched data to a plurality of unpaired downlink bearer channels. To achieve this asymmetric data transfer capability Lin teaches (column 8 lines 38-57 and column 9 lines 1-10) a radio base station, comprises a main antenna and main transceiver and is also provided with an auxiliary antenna, and a supporting auxiliary transmission apparatus. The radio base station serves a plurality of subscriber radio terminals, each comprising a subscriber transceiver and a subscriber antenna. Each subscriber to the system is provided with, in addition to the

conventional subscriber radio terminal comprising subscriber antenna and subscriber transceiver, a downlink access receiver for receiving downlink transmissions from the auxiliary base station equipment. At the subscriber premises, the downlink access receiver may be connected to the existing conventional subscriber antenna by means of a multiplexer. Communication between the base station main antenna and subscriber transceiver is by means of the conventional fixed wireless access link, represented in FIG. 4 by the bidirectional arrow, comprising a frequency division duplex pair consisting of a first frequency used for an uplink between the subscriber transceiver and the base station main antenna, and a second frequency used for transmission from the base station main antenna to the subscriber transceiver. Additionally, a third wireless link operating on the downlink only is provided for transmission at a third frequency from base station auxiliary antenna to the subscriber premises. Base station is connected by conventional backhaul transmission line to a conventional local exchange, which connects the radio base station to an Internet service provider accessible over a backbone communications network, e.g. a Public Switched Telephone Network (PSTN). User terminal e.g. a personal computer, at subscriber's premises is provided with access to Internet services via the downlink access receiver.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett and Tonkin's teaching by incorporating Lin's teaching of asymmetric network node. The motivation is that bandwidth requirements are not the same for both upload and download direction. Tailoring downlink and uplink in a network according to bandwidth requirement makes more efficient use of network

resources. Also some data (speech) require immediate transportation, and need guaranteed and quickest delivery path, while other data (file or image etc.) do not need guaranteed and quickest delivery path.

8. Claims 5, 6, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin, and further in view of Yuan et al. (US PAT PUB 2002/0122420), herein after referred to as Yuan.

Jewett and Tonkin teach of processing of data packets as described in the rejection of claims 1 and 30 above.

In regards to claims 5, 6, 32 and 33 Jewett and Tonkin do not teach the steps of segmentation and merging of data packets during packet processing.

In regards to claims 5, 6, 32 and 33 Yuan teaches in page 1 section 0009 the steps of dividing the packet into a number of segments and in page 1 section 0010 re-assembling the packet from the segments inside the payloads of the received cells

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett and Tonkin's teaching to incorporate the steps of segmenting and re-assembling of data packets as taught by Yuan. The motivation is that segmentation of packets to fixed size length at the source end and re-assembling them at destination end can reduce the time of transportation and processing of packets over the networks.

9. Claim 34, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin, in view of Lin, in view of Yuan and further in view of Brailean et al. (US PAT 5872777), herein after referred to as Brailean.

In regards to claims 34, 35 Jewett in view of Tonkin, in view of Lin, in view of Yuan teach the steps of transporting of data packets asymmetrically as described in the rejections of claims 1, 19 and 30. Jewett teaches of data packets being sent over tcp/ip (page 2 section 0030) and It is known in the art that when using tcp/ip, ip packets can reach the destinations out of order.

In regards to claims 34, 35 Jewett in view of Tonkin, in view of Lin, in view of Yuan do not teach that data packets being sent to storage node are in order.

Brailean teaches a method of transmitting a group of packets in sequence (page 5 line 32-62 by using sequence number.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett in view of Tonkin, in view of Lin, in view of Yuan's teaching to incorporate the steps of sending a group of data packets as a transaction in sequence as taught by Brailean. The motivation is that by sending data packets in sequence reduces the packet processing time at the destination end making the network more efficient in terms of processing time and resource allocation.

10. Claim 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin further in view of Brailean et al. (US PAT 5872777), herein after referred to as Brailean.

In regards to claims 7, 8, Jewett and Tonkin teach the steps of transporting of data packets asymmetrically as described in the rejections of claims 1, 19 and 30. Jewett teaches of data packets being sent over tcp/ip (page 2 section 0030) and It is known in the art that when using tcp/ip, ip packets can reach the destinations out of order.

In regards to claims 7, 8 Jewett and Tonkin do not teach that data packets being sent to storage node are in order.

Brailean teaches a method of transmitting a group of packets in sequence (page 5 line 32-62 by using sequence number.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett and Tonkin's teaching to incorporate the steps of sending a group of data packets as a transaction in sequence as taught by Brailean. The motivation is that by sending data packets in sequence reduces the packet processing time at the destination end making the network more efficient in terms of processing time and resource allocation.

11. Claim 18, 20 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin, in view of Lin and further in view of Brailean et al. (US PAT 5872777), herein after referred to as Brailean.

In regards to claims 18, 20 and 40 Jewett, Tonkin and Lin teach the steps of transporting of data packets asymmetrically as described in the rejections of claims 1, 19 and 30. Jewett teaches of data packets being sent over tcp/ip (page 2 section 0030) and It is known in the art that when using tcp/ip, ip packets can reach the destinations out of order.

In regards to claims 18, 20 and 40 Jewett, Tonkin and Lin do not teach that data packets being sent to storage node are in order.

Brailean teaches a method of transmitting a group of packets in sequence (page 5 line 32-62 by using sequence number.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett, Lin and Tonkin's teaching to incorporate the steps of sending a group of data packets as a transaction in sequence as taught by Brailean. The motivation is that by sending data packets in sequence reduces the packet processing time at the destination end making the network more efficient in terms of processing time and resource allocation.

12. Claims 9, 10, 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin and further in view of Arakawa (US 5751947).

Jewett and Tonkin teach the steps of transportation of packets over the network as described in the rejection of claim 1.

Jewett and Tonkin do not teach that when an error is detected during processing of a transaction, the host that initiated the transaction is notified so that the initiating host can handle the error. Further more Jewett and Tonkin do not teach, when the switching network detects an error, the switching network forwards an error message to the initiating host without trying to correct the error.

Arakawa teaches (column 2 lines 4-21) that a data error is generally generated when processing corresponding to a read command or write command sent from a host computer. In the magnetic disk apparatus, when the data error is generated, it is determined on the basis of the state of the data error whether the host computer is notified of the generation of the data error (determination of defect level). When the host computer is notified of the generation of the data error, the following methods are available. In the first method, after the host computer is notified of the generation of the data error, the magnetic disk apparatus waits for a specific command, sent from the host computer, for indicating the start of the substitute processing, the magnetic disk apparatus performs the substitute processing in response to the reception of the specific command. According to the second method, after the host computer is notified of the generation of the data error, the substitute processing is automatically performed in the magnetic disk apparatus.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett and Tonkin's teaching by incorporating methods of notifying only the source node of any generated error and not trying to correct the error as taught by Arakawa. The motivation is that such error handling will reduce loss of data packets in the network owing to re-transmission of packets by the host.

13. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin and further in view of Arakawa (US 5751947).

Jewett, Tonkin teach the steps of transportation of packets over the network as described in the rejection of claim 30.

Jewett, Tonkin do not teach that when an error is detected during processing of a transaction, the host that initiated the transaction is notified so that the initiating host can handle the error. Further more Jewett and Tonkin do not teach, when the switching network detects an error, the switching network forwards an error message to the initiating host without trying to correct the error.

Arakawa teaches (column 2 lines 4-21) that a data error is generally generated when processing corresponding to a read command or write command sent from a host computer. In the magnetic disk apparatus, when the data error is generated, it is determined on the basis of the state of the data error whether the host computer is notified of the generation of the data error (determination of defect level). When the host computer is notified of the generation of the data error, the following methods are

available. In the first method, after the host computer is notified of the generation of the data error, the magnetic disk apparatus waits for a specific command, sent from the host computer, for indicating the start of the substitute processing, the magnetic disk apparatus performs the substitute processing in response to the reception of the specific command. According to the second method, after the host computer is notified of the generation of the data error, the substitute processing is automatically performed in the magnetic disk apparatus.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett, Tonkin's teaching by incorporating methods of notifying only the source node of any generated error and not trying to correct the error as taught by Arakawa. The motivation is that such error handling will reduce loss of data packets in the network owing to re-transmission of packets by the host.

14. Claims 23, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin in view of Lin and further in view of Arakawa (US 5751947).

Jewett, Tonkin and Lin teach the steps of transportation of packets over the network as described in the rejection of claim 19.

Jewett, Tonkin and Lin do not teach that when an error is detected during processing of a transaction, the host that initiated the transaction is notified so that the initiating host can handle the error. Further more Jewett, Tonkin and Lin do not teach,

when the switching network detects an error, the switching network forwards an error message to the initiating host without trying to correct the error.

Arakawa teaches (column 2 lines 4-21) that a data error is generally generated when processing corresponding to a read command or write command sent from a host computer. In the magnetic disk apparatus, when the data error is generated, it is determined on the basis of the state of the data error whether the host computer is notified of the generation of the data error (determination of defect level). When the host computer is notified of the generation of the data error, the following methods are available. In the first method, after the host computer is notified of the generation of the data error, the magnetic disk apparatus waits for a specific command, sent from the host computer, for indicating the start of the substitute processing, the magnetic disk apparatus performs the substitute processing in response to the reception of the specific command. According to the second method, after the host computer is notified of the generation of the data error, the substitute processing is automatically performed in the magnetic disk apparatus.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett, Tonkin and Lin's teaching by incorporating methods of notifying only the source node of any generated error and not trying to correct the error as taught by Arakawa. The motivation is that such error handling will reduce loss of data packets in the network owing to re-transmission of packets by the host.

15. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin in view of Arakawa and further in view of Feuerstraeter et al. (US PAT 6154464), hereinafter referred to as Feuerstraeter.

Jewett, Tonkin, LIn and Arakawa teach of possible errors during data transportation as described in the rejection of claim 9.

Jewett, Tonkin, Lin and Arakawa do not talk of errors in physical layer.

Feuerstraeter teaches that errors can happen in physical layer (column 9 lines 9-20) and can be detected by the network node.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett and Tonkin's teaching to incorporate the teachings of Feuerstraeter about errors in physical layer. The motivation is that errors can be generated in physical layer and detection of error at the earliest level at lower layers saves unnecessary processing of packets by higher layers.

16. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin, in view of Arakawa and further in view of Bose et al. (US PAT PUB 2002/0035633), hereinafter referred to as Bose.

Jewett, Tonkin and Arakawa teach of possible errors during data transportation as described in the rejection of claim 9.

In regards to claims 12 and 13 Jewett, Tonkin and Arakawa do not talk of errors in link or transport layer.

In regards to claims 12 and 13 Bose teaches of errors can happen in transport and link layer (column 3 section 0028).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett and Tonkin's teaching to incorporate the teachings of Bose about errors in transport and link layer. The motivation is that errors can happen at transport and link layer and detection at the earliest level at lower layers saves unnecessary processing of packets by higher layers.

17. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jewett in view of Tonkin, in view of Lin and further in view of Harriman, Jr. (US PAT 5838960), hereinafter referred to as Harriman.

Jewett, Tonkin, Lin teach of packet processing methods as described in the rejections of claims 1 and 19.

Jewett, Tonkin, Lin do not teach that data packets have variable number of blocks.

Harriman teaches of data packets having multiple blocks (column 1 lines 11-13, A data packet is described as a well-defined block of bytes, typically consisting of a header, data, and trailer).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jewett, Tonkin, Lin's teaching by incorporating Harriman's teaching of data packets having multiple blocks because any data packets transmitted through the network will consist of the address of its intended destination in addition to the data itself at the least.

Allowable Subject Matter

1. Claims 21, 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

- **Prior arts pertinent to the application but not used in the office action:**
- Computer system and method of assigning a storage device to a computer Kitamura et al. (US PAT PUB 2002/0091828)
- Load balancing using directory services in data processing system Blumenau et al. (US PAT 6438595)
- High Speed Multimedia Data Network Pogue Jr. (US PAT 5995512)
- Automatically transmitting scheduling data from a plurality of storage systems to a network switch for scheduling access to the plurality of storage system Hamlin (US PAT 6691198)
- Addressable video feed system Steele et al. (US PAT 5216525)
- Storage system including a switch Matsunami et al. (US PAT 6701410)

- System apparatus and method for managing multiple host computer operating requirement in a data storage system McKean et al. (US PAT 6438648)
- Transmitting sequence numbers of information in a packet data transmission system Dryman et al. (US PAT 4617657)

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Salman Ahmed
Examiner
Art Unit 2666

SA